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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/077,104

02/15/2002

Andrew Moy

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01/13/2005

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EXAMINER

PHAN, RAYMOND NGAN

ART UNIT

PAPER NUMBER

2111

DATE MAILED: 01/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/077,104	MOY, ANDREW	
	Examiner	Art Unit	
	Raymond Phan	2111	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 10-17, 21-27 and 32-36 is/are rejected.
- 7) ☒ Claim(s) 6-9, 18-20 and 28-31 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Part III DETAILED ACTION

Notice to Applicant(s)

1. This action is responsive to the following communications: amendment filed on September 27, 2004.
2. This application has been examined. Claims 1-36 are pending.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 4-5, 10-17, 21-23, 26-27, 32-36 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Brown (US No. 6,385,686) in view of Khan et al. (US No. 6,625,683).

In regard to claims 1, 15, 23, Brown discloses the method for processing operations in a system including a bus, a target device and devices capable of accessing the target device over the bus, wherein the target device performs: receiving a transaction request from one of the devices over the bus (see col. 4, line 64 through col. 5, line 15); determining a delayed read request is if the read request has been previously requested (see col. 4, line 64 through col. 5, line 15); issuing a command to disconnect the device initiating the transaction request from the bus (see col. 5, lines 7-15); and allowing the device initiating the transaction request to reconnect to the bus and complete the transaction request after the delayed read request is completed (see col. 4, line 64 through col. 5, line 29). But Brown does not specifically disclose the determining whether a delayed read request is pending after receiving the transaction request; issuing a command to disconnect in

response to the determining that the delayed read request is pending. However Khan et al. disclose the determining whether a delayed read request is pending (i.e. data is not ready) after the bus master 300 tries the delayed transaction request; issuing a command to disconnect (i.e. retry) to the bus master 300 in response to the determining that the delayed read request is pending (see col. 10, lines 3-50). Therefore, it would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have combined the teachings of Khan et al. within the system of Brown because it would improve the efficiency of the bus by freeing up the bus while the read request is handled by the bus bridge.

In regard to claims 4, 26, Brown discloses wherein the command to disconnect comprises a retry disconnect that occurs before data subject to the transaction request is transmitted (see col. 5, lines 7-15).

In regard to claims 5, 17, 27, further comprising: determining whether requested data for the delayed read request is available to return, wherein the command to disconnect the device initiating the transaction request is issued after the requested data for the delayed read request is determined to be available to return (see col. 5, lines 4-15).

In regard to claims 10, 21, 32, Brown discloses wherein the bus, target device, and devices communicate using the Peripheral Component Interconnect (PCI) protocol, and wherein the devices that initiate the delayed read request and transaction request comprise master devices for the bus (see col. 4, line 64 through col. 5, line 15).

In regard to claims 11, 22, 33, Brown further discloses; determining whether a variable indicates a first state or a second state, wherein the state indicated by the variable determines when the target device issues the command to disconnect the

device initiating the transaction request while the delayed read request is pending (see col. 4, lines 12-59).

In regard to claims 12, 34, Brown further discloses: issuing the command to disconnect the device initiating the transaction request when the device that initiated the delayed read request attempts to reconnect to the target device if the variable indicates the first state (see col. 4, lines 12-59); and issuing the command to disconnect the device initiating the transaction request after all the requested data for the delayed read request is determined to be available to return if the variable indicates the second state (see col. 4, lines 12-59).

In regard to claims 13, 25, Brown further discloses: allowing the transaction request to proceed during a time at which all the requested data for the delayed read request is not available to return if the variable indicates the second state (see col. 4, lines 12-59).

In regard to claims 14, 36, Brown discloses wherein transaction request and delayed read request are initiated from different devices (see col. 4, line 64 through col. 5, line 40).

5. Claims 2-3, 24-25 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Brown in view of Khan and further in view of Melo et al. (US No. 6,279,087).

In regard to claims 2, 24, Brown discloses the claimed subject matter as discussed above rejection except the teaching of wherein the delayed read request is directed toward a first memory region and the transaction request comprises an Input/Output request directed toward a second memory region. However Melo et al. disclose the delayed read request is directed toward a first memory region 220 and the transaction request comprises an Input/Output request directed toward a

second memory region 222 (see figure 2, col. 5, line 24 through col. 6, line 27).

Therefore, it would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have combined the teachings of Melo et al. within the system of Brown and Khan et al. because it would improve the performance of the bus bridge.

In regard to claims 3, 25, Melo et al. disclose wherein the first and second memory regions are implemented within the target device (see figure 2, col. 5, line 24 through col. 6, line 27). Therefore, it would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have combined the teachings of Melo et al. within the system of Brown and Khan et al. because it would improve the performance of the bus bridge.

Allowable Subject Matter

6. Claims 6-9, 18-20, 28-31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is an Examiner's statement of reasons for the indication of allowable subject matter: Claims 6, 18, 28 are allowable over the prior art of record because the Examiner found neither prior art cited in its entirety, nor based on the prior art, found any motivation to combine any of the said prior arts which teach the step of allowing the transaction request to proceed if the delayed read request is pending and if the requested data for the delayed read request is not available to return.

The remaining claims, not specifically mentioned, are allowed for the same rationale as set forth their dependency.

Response to Amendment

8. Applicant's arguments and amendments, see pages 3-16, filed on September 27, 2004, with respect to the rejections of claims 1-36 under 35USC102/103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Khan et al.

Conclusion

9. Claims 1-5, 10-17, 21-27, 32-36 are rejected. Claims 6-9, 18-20, 28-31 are objected.

10. The prior arts made of record and not relied upon are considered pertinent to applicant's disclosure.

Drerup et al. (US Pub No. 2002/0078282) disclose a target directed completion for bus transaction.

Graham et al. (US No. 6,233,641) disclose an apparatus and method of PCI routing in bridge configuration.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Raymond Phan, whose telephone number is (571) 272-3630. The examiner can normally be reached on Monday-Friday from 6:30AM- 4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Primary, Paul Myers can be reached on (571) 272-3639 or via e-mail addressed to paul.myers@uspto.gov. The fax phone number for this Group is (703) 872-9306.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [raymond.phan@uspto.gov].

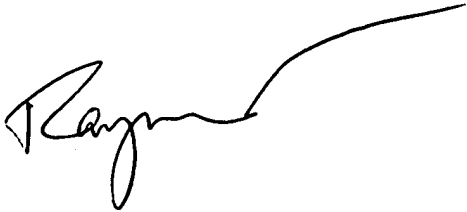
All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see [hop://pair-direct.uspto.gov](http://pair-direct.uspto.gov). Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Any inquiry of a general nature or relating to the status of this application should be directed to the TC
2100 central telephone number is (571) 272-2100.

A handwritten signature in black ink, appearing to read 'Raymond', with a long, sweeping horizontal line extending to the right.

Raymond Phan
1/4/05